



# F-DVR200

## DVR Technical Specification



F-DVR200 is an embedded Linux operation system device, it research and development by Four-Faith company. F-DVR200 has 8 channel video and audio input. Support 3G/4G, WIFI, LAN, GPS/Beidou(optional), large local storage and hard disk vibration protection, flexible choices for video channels and encord plan.

This product has been widely used for audio and video monitoring in public transport, tourism, industrial sectors, such as city bus, bus station, tour bus, long-distance bus, tourist attractions, industrial minerals and other places.

## Application Topology



## Product Specification

### Design for Vehicle Application

- High-powered 32bits CPU
- Vehicle power supply design, support under-voltage, over-voltage, over-current, reverse connection, short circuit and surge protection
- Wide Power range(DC 9~36V)
- Wide Operating Temperature(-35~+75°C)
- Aviation plug for power input
- Metal shell, high heat radiating and anti collision performance
- Shockproof design,suitable for vehicle vibrating environment
- Security structure design for SD/SIM card

### Stability and Reliability

- Support hardware and software WDT to ensure the stability of the system
- Support auto recovery mechanism, including online detect, auto redial when offline to make device always online
- Data storage with hard disk, ensure the data security and stability on high speed read and write
- Ethernet port: 1.5KV magnetic isolation protection
- RS232/RS485/RS422 port: 15KV ESD protection
- SIM/UIM port: 15KV ESD protection
- Antenna port: lightning protection(optional)

### High-performance

- 8 channels real-time video and audio encode, H.264 encode, low bitrate, better video quality
- Support 4 channels or 8 channels, choose by demand
- Support 4 channels or 8 channels replay and record
- Support USB/remote/local-web to update firmware
- Support 485 interface
- Support 8 channel analog input (16 bit AD, Support voltage signal, range: 0~5V), 6 channel digit input, 6 channel digit output (2 channel for Relay driver)
- LED light, can quickly grasp the machine running state
- Matched server platform and client
- Multi-transmission media, used for every application scenarios
- Smart rate control, keep stability video transfer via wireless network
- Multi data export, USB local export, remote web download, local web download
- Removable hard-disk, connect hard-disk to PC by USB, used for export and replay record
- Support multi record mode: IR control record, timer record, move detect record, alarm record
- 6 work modes at the same time: monitor, record, replay, backup, network-transfer, PTZ
- Support dual-streams: main stream and sub stream. Main stream (big imagesize) use for local record, sub stream use for network-transfer to save network bandwidth
- Support video output use CVBS or VGA interface
- Storage media support hard-disk, SD card, Auto cover
- Support protect alarm record, can protect the important video
- Steady storage, power protection mechanism keep record complete, even lost power
- Low voltage protection
- Multi boot mode: Timer, ACC, ACC+Timer, NO, IR

- Support IR control, support external infrared antenna
- Support WIFI connect to server and transfer data
- Support local UI
- Support remote TTS(optional)
- Support remote Voice Talkback
- Multi configuration parameter: local UI, local web, remote web
- Support NTP, RTC embedded
- Support multi network switch, configurable for Network priority
- Support the GPS/Beidou positioning function (optional)

## Product Specification

Video and Audio Specification		
Item	Content	
Video	Input	8 channel D1 Electrical level: 1.0Vp-p, Impedance: 75Ω
	Output	1 channel CVBS Electrical level: 1.0Vp-p, Impedance: 75Ω PAL: D1 (704*576), CIF(352*288)
		1 channel VGA 1280*1024 / 1024*768 / 704*576
Audio	Input	8 channel Linear Electrical level, Impedance: 1kΩ
	Output	1 channel Linear Electrical level, Impedance : 600Ω
Code	Video Compression	H.264
	Image Resolution	PAL: D1/CIF/QCIF
		NTSC: D1/CIF/QCIF
	Video frame	PAL: 1-25fps
		NTSC: 1-30fps
	Video rate	Network dynamic adjustment
	Stream type	Optional streaming video or compound flow
	Audio Compression	ADPCM
Audio rate	32kpbs	
Voice intercom	ADPCM	
Storage Specification		
Item	Content	
HDD Type	2.5' SATA HDD/SSD	
HDD Capacity	HDD: 500GB(optional, optional Extended to 2 TB)	
HDD Access	Standard 2.5 inch SATA interface, pluggable type	
HDD Protection	Shock absorber hard disk box	
SD Type	Standard SD/SDHC	
SD Capacity	64GB(optional)	

SD Access	Standard SD/SDHC card slot, support hot plug
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### Cellular Specification

Item	Content
Cellular Module	High-performance cellular module (optional single module, dual module or none module)
Standard	Can support: TDD-LTE/FDD-LTE/EVDO/WCDMA/TD-SCDMA/CDMA1X/GPRS/EDGE Optional support:single-mode,multi-mode or All network communication
Bandwidth	FDD LTE(DL:100Mbps,UL:50Mbps) TDD LTE(DL:61Mbps,UL:18Mbps) CDMA2000 1X EVDO Rev A (DL:3.1Mbps,UL:1.8Mbps) WCDMA(DL:42Mbps,UL:5.76Mbps) TD-SCDMA(DL:4.2Mbps,UL:2.2Mbps)
TX power	<24dBm
RX sensitivity	<-109dBm

### GPS Specification

Item	Content
GPS Module	Industrial GPS module(optional Beidou module)
Receiver Type	50-channle GPS L1(1575.42MHz)C/A code SBAS: WAAS,EGNOS,MSAS,GAGAN
Max. update rate	5 Hz
Accuracy	Position: 2.5m CPE SBAS: 2.0m CPE
Sensitivity	Tracking: -160dBm Reacquisition: -160dBm Cold starts: -146dBm

### WIFI Specification

Item	Content
Standard	IEEE802.11b/g/n, 2.4G,AP model, Station model(optional)
Bandwidth	IEEE802.11b/g: 54Mbps(max) IEEE802.11n: 150Mbps(max)
Security	WEP, WPA, WPA2, etc. WPS (optional)
TX power	13dBm (11n), 14dBm (11g), 16dBm (11b)
RX sensitivity	<-75dBm@54Mbps

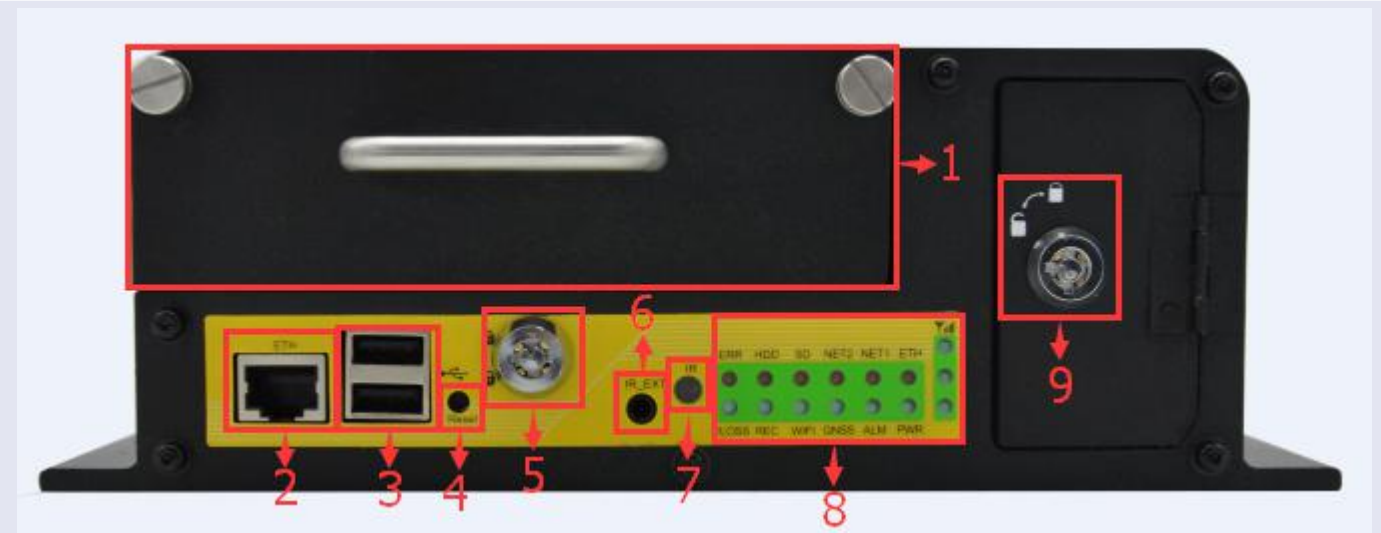
### Hardware System

Item	Content
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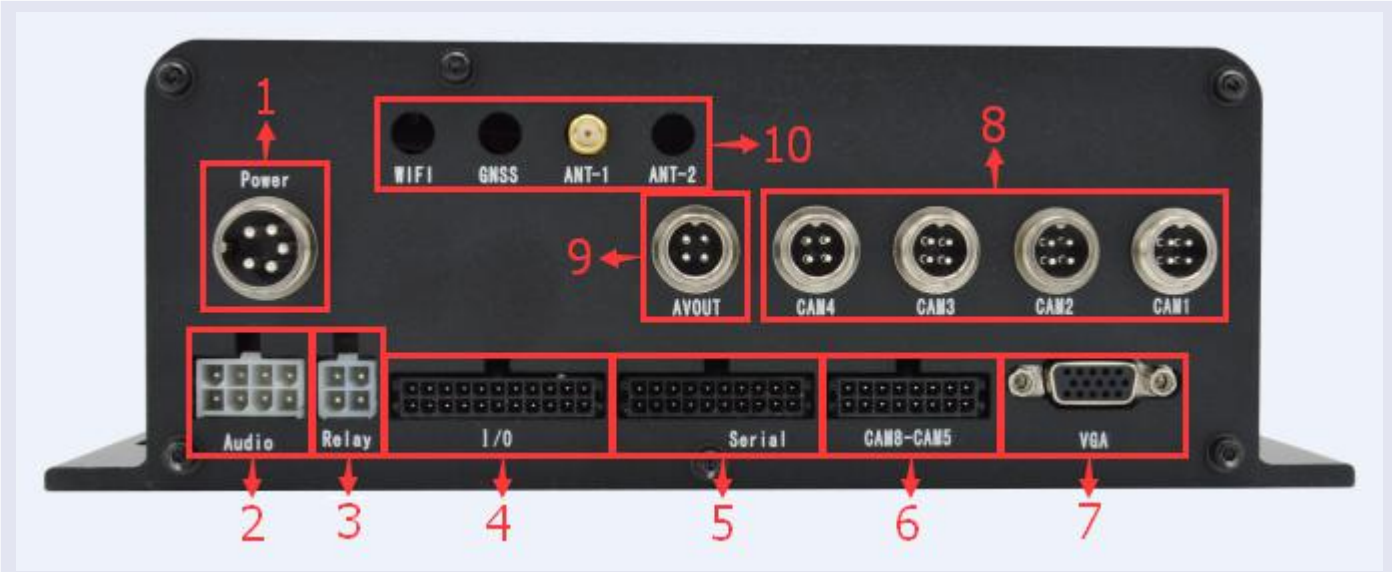
CPU	High-performance ARM9 CPU
FLASH	16MB(Extendable to 32MB)
DDR2	256MB

### Interface Type



No.	Name	Content
1	HDD Box	Support a 2.5' SATA HDD/SSD, Insert or delete must sure hard disk lock is open
2	LAN	10/100 Mbps Ethernet interface
3	USB	2 USB2.0 interface
4	Reset	Reset button, press this button more than 0.1 seconds to reset the DVR device
5	HDD Lock	Protect hard disk and power control equipment
6	IR-EXT	External infrared remote control interface
7	IR	Infrared remote control interface
8	Indicator	PWR: Power indicator ALM: Alarm indicator GNSS: GPS/Beidou indicator WIFI: WIFI indicator REC: Store the video indicator VLOSS: Video loss of indicator ETH: Ethernet interface indicator NET1: Network 1 indicator NET2: Network 2 indicator SD: SD Card indicator HDD: Hard disk indicator ERR: Error alarm indicator

9 Card Lock Protect SD or SIM/UIM



No.	Name	Content
1	Power	Power and start control interface, 5P aviation plug
2	Audio	Audio input, output and control interface, 5557-8P
3	Relay	2 Relay output interface, 5557-4P
4	I/O	6 DIN, 4 DOUT(OC), 8 AIN and Power output
5	Serial	RS232 communication interface, CAN bus, RS232 and RS485 bus and power output
6	CAM5-CAM8	5 ~ 8 channel video and audio input and power output
7	VGA	Standard VGA interface
8	CAM1~CAM4	1 ~ 4 channel video and audio input, output power, 4P aviation plug
9	AVOUT	Video and audio output, 4P aviation plug
10	Antenna	SMA antenna interface, GNSS antenna, WIFI and Cellular module antenna

### Power Supply

Item	Content
Standard Power	DC 12V/5A(optional DC 12V/8A)
Power range	DC 9~36V
Working current	<1100mA (12V)
Standby current	<170mA (12V)

### Physical Characteristics

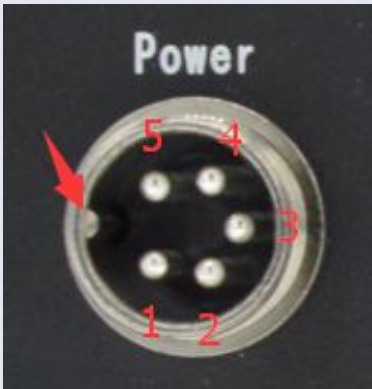

Item	Content
Housing	Metal shell, shock proof design
Dimensions	231x210x78 mm
Weight	3.22kg





## Other Specification

Item	Content
Operating Temperature	-35~+75°C(-31~+167°F)
Storage Temperature	-40~+85°C(-40~+185°F)
Operating Humidity	95% (unfreezing)

## Interface Definition

No.	Identification	Image	Definition	Description
1	Power	Type: 16M-5P 	1: DCIN+ 2: DCIN+ 3: DCIN- 4: DCIN- 5: ACCIN	Input voltage range: DC 9~36V ACCIN: Ignition control signal
2	Audio	Type: 5557-2*4P 	1: Aout-R 2: Aout-L 3: SPK+ 4: SPK- 5: SW 6: GND 7: MIC+ 8: MIC-	Aout: Dual channel TTS and local propaganda output, Power "2*25W/4Ω" SPK: Listening to the speaker Power "7.5W/8Ω" SW: Propaganda switch MIC: Intercom, propaganda input
3	Relay	Type: 5557-2*2P	1: RelayA+ 2: RelayA- 3: RelayB+ 4: RelayB-	RelayA: First relay RelayB: Second relay Largest switching voltage: 30VDC Largest switching current: 1A Largest switching power: 30W

				
4	I/O	<p>Type: Spacing 3.0mm</p> 	<p>1: DIN2 2: DIN1 3: DIN4 4: DIN3 5: DIN6 6: DIN5 7: DOUT2 8: DOUT1 9: DOUT4 10: DOUT3 11: +5V 12: COM 13: +12V 14: AGND 15: AIN8 16: AIN7 17: AIN2 18: AIN1 19: AIN4 20: AIN3 21: AIN6 22: AIN5</p>	<p>DIN: Optical isolation digital input Logic 0: 0~3V, connect Logic 1: 5~30V, disconnect</p> <p>DOUT: Optical isolation OC output Drive current rating: 50mA Drive voltage rating: 35V</p> <p>AIN: Buffer 16 analog input 0~5V Voltage signal input 4~20mA Current signal input (optional)</p> <p>AGND: Analog input GND Note: Using DIN and DOUT, Must connect COM</p> <p>IO Power / Serial Power: Support: 12V/2A Support: 5V/2A</p>
5	Serial	<p>Type: Spacing 3.0mm</p> 	<p>1: +12V 2: +12V 3: GND 4: GND 5: +5V 6: +5V 7: RS485A1</p>	<p>Serial Power / IO Power: Support: 12V/2A Support: 5V/2A RS485A1,RS485B1(TXD2,RXD2 optional), RS485 Camera console RS485A2,RS485B2(TXD4,RXD4 optional), Optional extension</p>

			8: RS485B1 9: RS485A2 10: RS485B2 11: CANL 12: CANH 13: RXD1 14: TXD1 15: RXD2 16: TXD2 17: RXD3 18: TXD3 19: RXD4 20: TXD4	TXD1,RXD1: Main MCU Debug TXD3,RXD3: Div MCU Debug CANH,CANL: CAN Bus interface, Optional extension
6	CAM5-CAM8	Type: Spacing 3.0mm 	1: AIN5 2: +12V 3: VIN5 4: GND 5: AIN6 6: +12V 7: VIN6 8: GND 9: AIN7 10: +12V 11: VIN7 12: GND 13: AIN8 14: +12V 15: VIN8 16: GND	1~4: 5 channel Video and audio input 5~8: 6 channel Video and audio input 9~12: 7 channel Video and audio input 13~16: 8 channel Video and audio input
7	VGA	Type: DB15 	Standard VGA interface	Video output

8	CAM1~CAM4	<p>Type: 12M-4P</p> 	<p>1: +12V 2: GND 3: AIN 4: VIN</p>	Video and audio input channel
9	AVOUT	<p>Type: 12M-4P</p> 	<p>1: +12V 2: GND 3: AOUT 4: VOUT</p>	Video and audio output channel
10	Antenna	<p>Type: SMA</p> 	<p>WIFI: WIFI Antenna GNSS: GNSS Antenna ANT-1: Main 3G/4G Antenna ANT-2: Diversity 3G/4G Antenna</p>	